DCC 500

DIGITAL CAMERA CONTROL UNIT

CE

USER MANUAL
CARE INSTRUCTIONS
PRODUCT SPECIFICATION

PLEASE READ CAREFULLY BEFORE OPERATION OF THIS EQUIPMENT

CARE AND USE INSTRUCTIONS
PRODUCT SPECIFICATION

DESCRIPTION DIGITAL CAMERA CONTROL UNIT
FOR DRAIN AND PIPELINE INSPECTION

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CONTENTS

INTRODUCTION

CONNECTING A CAMERA

OPERATION
SYSTEM CONNECTION
RECORDING THE SURVEY

BASE UNIT OPERATION
CONTROLS

SCRIPTWRITER
PRELOADED PAGES
EDITING
OTHER FUNCTION KEY'S
KEYBOARD KEY'S
EDITING TEXT

CARE INSTRUCTIONS
HANDLING
CLEANING

MAINTENANCE
TROUBLESHOOTING
ROUTINE SERVICE

PRODUCT SPECIFICATIONS

Crusade Designs Ltd. reserves the right to make changes to the electrical, electronic, optical, mechanical, software and firmware specifications of its products without notification. This product carries a 12-month warranty against defective materials and workmanship without prejudice to customer's statutory rights. Crusade Designs Ltd. disclaims any responsibility for consequential loss or failure due to incorrect use or use with incompatible equipment.

INTRODUCTION

These instructions are limited to the use and care of the DCC 500 Base unit and are in no way intended to give guidance on the interpretation of data or the techniques of safe access to line entry points.

The DCC 500 is designed for use with CRUSADE DESIGNS CPR 060 range of pipe inspection cameras. Your supplier can advise on compatibility of other existing equipment and details of any modifications required. These instructions assume that the user is conversant with the basic operation of the CPR 060 systems.

CONNECTING A CAMERA TO THE DCC 500

The Crusade CPR 060 series of camera's may be connected to the DCC 500 base unit via its link cable. Please refer to the CPR 060's manual for this equipment.

Always ensure that none of the equipment is powered up when connecting or disconnecting a camera or any cables.

OPERATION

SYSTEM CONNECTION

Assemble the camera, skid, etc. and plug one end of the 10 metre link cable into the blue box on the side of the cable rod cage. To release the cable depress the raised key on the plug before pulling out. Plug the other end into the power flip box in the 400 base unit lid. To release the cable depress the protruding lock plate on the power flip box socket before pulling the cable out. Please note these cannot be connected into the wrong apertures.

Before turning the system on please observe the following if you are using a generator. Please ensure it is producing the correct 110v / 230v ac voltage within plus or minus 10% and please let it operate for one minute before connecting the 400 base unit to it. Ensure that all camera equipment is connected before switching the base unit on.

Connect the mains lead to the 110v / 230v ac supply
Depress the power switch on the right hand side to switch the base unit on.

If you wish to disconnect any item or change any item please switch the unit off before doing so, for example changing a skid, connecting/disconnecting the recorder unit or disconnecting the camera at the end of a run.

TO RECORD THE SURVEY

Insert the recording media into the separate recorder unit. On V.C.R.s please use quality media as this will prolong the life of your V.C.R.s heads. Follow the recorder's instruction book to make the recording or to play back. Please note that video recorders have specific operational working parameters of humidity and temperatures as stated in the manual and these should be adhered to. Failure to do this will cause media handling problems. The following are a few hints that may save these problems. Please store the media and the recorder in the same temperature and humidity conditions. Do not store media on the vehicle dashboard. If possible garage the vehicle to prevent equipment becoming very cold, or remove the base unit from the vehicle and store it in dry cool conditions. Before leaving to go to the survey site plug the system into the supply and switch the system on ensuring the recorder is switched on. This will warm the recorder and hopefully drive any moisture out. If you have to remove the base unit from the vehicle please make sure that you do not place it in a damp area whilst you are working as this may introduce excessive dampness into the recorder.

BASE UNIT OPERATION

CONTROLS

POWER Switches unit on or off

FUSE HOLDER 2x T3.15Amp 20mm

SCRIPTWRITER

The scriptwriter has 26 pages designated A to Z which can be selected individually by holding down the Ctrl key and pressing the corresponding letter key (A to Z) or in sequence by holding down the Fn (Function) Key and pressing Page Up or Page Down keys. This action will automatically display the page. Any page displayed on screen can be removed by the use of the Esc key. In this display mode all other keys are inoperative.

PRELOADED PAGES

Certain pages are preloaded at the factory but can be edited by the user to suit their own preferences. The initial page, shown only at switch on, cannot be edited as this contains information applicable to the base unit. I.E. version and ESN (Electronic Serial Number). The preloaded pages are shown below: -

A	**Your company information page**	**I**	**COLLAPSE**
B	**Survey Details**	**J**	**SILT/DEBRIS**
C	**Blank**	**K**	**ROOTS**
D	**WATER 00%**	**L**	**SCALE/GREASE**
E	**DISPLACED JOINT**	**M**	**CONNECTION**
F	**OPEN JOINT**	**N**	**CHAMBER**
G	**RADIAL CRACK**	**O**	**END OF SURVEY**
H	**LONGITUDINAL CRACK**	**P – Z**	**All these pages are left blank.**

EDITING

Once a page has been displayed on the screen it can be edited by pressing the EDIT key (F1). In addition to this a grid of dots can be placed on the screen to show character positions. This is toggled on and off by the GRID key (F3). When displayed the grid has two sizes of dot, the large one indicates a space with a black background behind it and a small dot indicates a space with no background I.E. video.
After editing the page it can either be saved by pressing the SAVE key (F4) or aborted by pressing Esc reverting to the original text, either key will exit the edit mode.

OTHER FUNCTION KEY'S

F5	CLS	Will clear the whole of the screen to transparent blanks.
F6	B/GND	Turns background on off on a line-by-line basis.
F7	SIZE	Toggles through 3 sizes of character on a line-by-line basis.
F8	INS LINE	Inserts a blank line at the cursor all others moving down.
F9	DEL LINE	Deletes the line at the cursor all other moving up.

KEYBOARD KEY'S

Insert	Toggles between insert and overlay.
Fn Home	Moves to start of line.
Fn End	Moves to end of line.
Arrow Keys	Moves cursor around the screen.
← Backspace	Deletes the character before the cursor all others move left.
Del	Deletes the character at the cursor all others move left.
Tab	Moves the cursor 8 places right for small characters and 4 places for large.

EDITING TEXT

When entering the edit mode the keyboard will be set up as follows: -

Caps Lock	on for uppercase; can be taken off by pressing the Caps Lock key.
Character size	set to intermediate; can be changed by the SIZE key (F7).
Cursor	set to overlay mode; can be changed by the Insert key.

While editing the cursor has two modes a large one in overlay, where characters overlay any that were there previously, and a small one in insert mode, where characters will be inserted, and the rest of the line moved right. As was mentioned earlier a space can have a background or not. Typing a space will produce a space with a background. Holding down the shift key while typing a space will produce a space with no background.

CARE INSTRUCTIONS

HANDLING

The reliability and lifetime of this camera will depend in large measure on the care it receives. It has been designed for the harsh environment of drain inspection but, as with any other equipment, it will repay a little care taken in its use and regular cleaning and inspection afterwards.

CLEANING

All exposed metal parts are either anodized aluminium or plastic. Cleaning is always easier and more effective when the deposit is fresh.

DO's

- All items should be cleaned with a damp cloth moistened with a mild detergent solution (e.g. washing-up liquid).
- Pay particular attention as silt, sand and similar material can be quite abrasive. A damp toothbrush or a small paintbrush are ideal for cleaning most of the recesses on all items.
- Use a soft lint-free cloth or proprietary lens cleaning tissue to clean any smears left on the monitor glass.

DO NOT's

- The base unit should not be cleaned by immersion.
- Do not scrub the monitor screen to remove particulate material as you may scratch it. Scratches on the monitor screen cannot be removed but particulate matter can be removed by rubbing with a cloth moistened with alcohol.
- Petroleum-based products or proprietary electrical equipment cleaners such as WD40 may contain solvents that attack non-metallic parts and should not be used.
- The electrical connections in the mating sockets are gold plated so should not be abraded.
- Do not use a high-pressure water-jet or steam cleaner.

MAINTENANCE

There are no user serviceable items inside any of the equipment covered by these instructions. Aside from regular cleaning, the only user serviceable items are replacement of recorder’s monitors or keyboards.

TROUBLESHOOTING

The picture flashes on and off whilst the camera is moving.
Suspect a cable or connector somewhere in the system and check that all connectors are right home, see manuals on each respective camera component.

Please contact factory for inspection or repair.

ROUTINE SERVICE

Regularly check all cable’s for splits both small and large, immediately cover these with amalgamating tape to keep moisture out. This will prolong the life of your cable without upsetting the measurement system. Regularly check cable plug’s.

SPECIFICATION

Width	490 mm
Height (closed position)	172 mm
Depth	350 mm
Weight	11.5 kg
Voltage:	110/230 volt ac
Link Cable	10 meters 5 pin X.L.R. plug and socket
Power Cable	2 meters
Inbuilt Text Writer	B/W 24 page + security screen
Characters per line	50 Single width, 25 Double width
Lines per screen	16 Single height, 8 Double height
Monitor	10.4" TFT LCD Metal cased
Native Resolution	640 x 480
Contrast Ratio	300:1
Viewing Angle	60 degrees
Brightness	300 Cd/m2
Colours	16.7 million
Screen Format	4:3
Recorder Unit	HARD DISC / MULTI MEMORY CARD See recorder's User Manual for Specific Specifications
Width	530 mm
Height	125 mm
Depth	525 mm
Weight	8.5 kg min 10 kg max (Depending on recorder unit used)

Compliance:

Electromagnetic Compatibility Directive 89/336/EEC Electrical Equipment Directive 73/23/EEC.